

REMARKS

This application has been carefully reviewed in light of the Office Action dated April 13, 2009. Claims 1 to 20 are pending in the application, with Claims 1, 19 and 20 being the independent claims. Reconsideration and further examination are respectfully requested.

Initially, Applicants thank the Examiner for the indication that Claims 5, 6 and 13 contain allowable subject matter and would be allowable if rewritten in independent form. Applicants have not rewritten these claims in independent form at this time, however, since all claims in the application now are believed to be in condition for allowance.

Applicants also wish to thank the Examiner for the telephonic interview conducted on July 23, 2009, with Eugene Worley, reg. no. 47,186, representing Applicants. During the interview, the rejection of claim 1 under 35 U.S.C. § 103(a) was discussed. Applicants argued that the newly cited Inoue reference does not disclose restricting an output torque of the engine to cause the vehicle speed to be restricted at or smaller than a predetermined value. In response, the Examiner contented that restricting the vehicle speed at or smaller than a predetermined value is inherently performed when the vehicle speed is lowered during operation of the vehicle. Applicants disagreed with this contention explaining that restricting the vehicle speed at or smaller than predetermined value places an upper limit on the vehicle speed at the predetermined, and is not simply lowering the vehicle speed during operation of the vehicle. Examiner indicated that he would reconsider the Inoue reference if Applicants submit the arguments in a written response, which Applicants have done in the present response.

Claims 1 to 4, 7 to 11 and 15 to 20 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,487,852 ("Murphy") in view of U.S. Patent (4,854,123) ("Inoue"); and Claims 1 to 4, 7 to 12 and 14 to 20 were rejected under 35 U.S.C. § 103(a) as

being anticipated by U.S. Patent No. 6,546,720 (“van Nieuwstadt”) in view of Inoue. Applicants respectfully traverse.

Claims 1, 19 and 20 are patentable over the applied reference because none of the applied references are seen to disclose or suggest at least the features of restricting or decreasing an output torque of an engine in response to detecting an abnormality occurrence in an addition device so that a vehicle speed is restricted at or smaller than a predetermined value.

The term “restrict” is defined by the American Heritage Dictionary as “[to] keep or confine within limits.” See attached American Heritage Dictionary, Fourth Edition, 2000, page 1487. Thus, restricting the vehicle speed at or smaller than a predetermined value, as recited in the claims, places an upper limit on the vehicle speed at the predetermined value, which confines the vehicle speed at or smaller than the predetermined value. Therefore, restricting the vehicle speed at or smaller than a predetermined value, as recited in the claims, is not simply lowering the vehicle speed during operation of the vehicle, as the Examiner contended during the Interview.

None of the applied references discloses restricting the vehicle speed at or smaller than a predetermined value, much less restricting the vehicle speed at or smaller than a predetermined value in response to the detection of an abnormality occurrence in the addition device. As discussed above, simply lowering the vehicle speed during operation of the vehicle does not restrict the vehicle speed at or smaller than a predetermined value. Furthermore, the Examiner has identified nothing in the prior art which teaches or suggests that any inherent restriction or lowering of the vehicle speed during operation of the vehicle is performed in response to a detection of an abnormality occurrence in an additive device, rather than simply being performed whether an abnormality occurrence has been detected or not.

Murphy, Inoue and van Nieuwstadt each concern controlling the addition/injection of a reactant into an engine exhaust. Murphy measures a temperature difference across a catalyst and uses the measurement to adjust the injection of reactants into the engine exhaust. See Murphy, Abstract. Inoue measures the revolution number and torque of the engine, calculates a proper flow volume of ammonia based on the measured revolution number and torque, and uses the calculated proper flow volume to control the amount of ammonia mixed with the gas exhaust. See Inoue, col. 3, lines 59-63 and col. 4, lines 19-36. van Nieuwstadt detects un-reacted portions of a reactant and a substance and uses the detected un-reacted portions to control the amount of reactant being added to the substance. See van Nieuwstadt, Abstract. However, none of Murphy, Inoue and van Nieuwstadt are seen to disclose or suggest at least the features of restricting the vehicle speed at or smaller than a predetermined value, much less restricting the vehicle speed at or smaller than a predetermined value in response to the detection of an abnormality occurrence in an addition device.

Acknowledging that Murphy and van Nieuwstadt do not teach the above features of the claims, the Office Action relied on Inoue as allegedly teaching the above features. However, contrary to the Office Action, Inoue does not disclose or suggest at least the above features of the claims for at least the reasons set forth below.

Inoue is directed to a method for removing nitrogen oxides from the gas exhaust of a diesel engine. Inoue discloses an arithmetic unit 5 that is connected to a engine revolution number sensor 3 and a torque sensor 4, and receives signals representing the engine revolution number and torque from the sensors 3 and 4, respectively. See col. 4, lines 21-26 and col. 4, line 63 to col. 5, line 1. The arithmetic unit 5 calculates a proper flow volume of ammonia based on the engine revolution number and torque measurements from the sensors 3 and 4, respectively,

and feeds the outcome to an admixing device 6. See col. 4, lines 26-36. The calculation by the arithmetic unit 5 involves calculating horsepower based on the detected engine revolution number and torque, calculating the total NO_x discharge based on the calculated horsepower, and multiplying the calculated horsepower by a NH₃/NO_x ratio to find the proper flow volume of ammonia. See col. 4, line 63 to col. 5, line 24.

However, Inoue does not disclose or suggest restricting the vehicle speed at or smaller than a predetermined value, much less restricting the vehicle speed at or smaller than a predetermined value in response to a detection of an abnormality occurrence in an addition device. Contrary to the Office Action, the arithmetic unit 5 of Inoue does not restrict the vehicle speed at or smaller than a predetermined value. As discussed above, the arithmetic unit 5 calculates the proper flow volume of ammonia based on measurements of the engine revolution number and torque from the sensors 3 and 4, respectively, and feeds the calculated proper flow volume to the admixing device 6 to control the amount of ammonia mixed with the gas exhaust. The arithmetic unit 5 of Inoue does not restrict the vehicle speed at or smaller than a predetermined value, much less in response to a detection of an abnormality occurrence in an addition device. In other words, the arithmetic unit 5 of Inoue does not place an upper limit of the vehicle speed at a predetermined value, confining the vehicle speed to at or smaller than the predetermined value.

Therefore, none of Murphy, Inoue and van Nieuwstadt are seen to disclose or suggest at least the features of restricting the vehicle speed at or smaller than a predetermined value, much less restricting the vehicle speed at or smaller than a predetermined value in response to the detection of an abnormality occurrence in an addition device.

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For at least the reasons given above, independent Claims 1, 19 and 20 are believed to be allowable over the applied references. Reconsideration and withdrawal of the § 103(a) rejections of Claims 1, 19 and 20 are respectfully requested.

The other claims rejected in the application are dependent, either directly or indirectly, from the independent claims discussed above and therefore are believed to be allowable over the applied references for at least the same reasons. Because each dependent claim is deemed to define an additional aspect of the invention, however, the individual consideration of each on its own merits is respectfully requested.

In view of the foregoing amendment and remarks, the entire application is believed to be in condition for allowance and such action is respectfully requested at the Examiner's earliest convenience.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 502203 and please credit any excess fees to such deposit account.

Respectfully submitted,

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